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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/758,611	01/11/2001	Todd Vincent Graves	9D-RG-19587	8977
7590	03/22/2004		EXAMINER	
John S. Beulick Armstrong Teasdale LLP Suite 2600 One Metropolitan Sq. St. Louis, MO 63102			LEUNG, PHILIP H	
			ART UNIT	PAPER NUMBER
			3742	
			DATE MAILED: 03/22/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	<i>W</i>
	09/758,611	GRAVES ET AL.	
	Examiner Philip H Leung	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 08 January 2004.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-28 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-28 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____

5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-14 and 17-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larsen et al (US 4,332,992) (reference A cited in the previous Office action), in view of Westerberg et al (US Re. 36,724) (reference AA previously cited by the applicants) or Shin (US 6,005,235) (previously cited).

Larsen shows an oven having a cooking cavity 12, a plurality of modules for delivering energy into the cavity, including a resistance heater 17 with a convection fan 19 positioned to direct air over the heater 17 for convectional radiant energy and thermal energy and a magnetron 18 for microwave energy and a control 20 configured to operation a microwave cooking mode 42, a convection/bake cooking mode 38 and a speedcook combination mode 40 with separate temperature and power level control 30 and 32 (see Figures 1 and 7 and col. 3, line 64 - col. 4, line 53). Although it does not expressly state that the resistance heater 17 is a source of radiant energy, however, such is inherent as resistance heaters in an electrical oven heat food by both radiation and thermal conduction. Such resistance heaters include sheath heaters as claimed (see claim 3). Larsen also fails to show the use of a lower heater. Westerberg or Shin shows that it is well known in the art of electrical ovens to provide an upper radiant heater and a lower heater inside the cooking cavity of a microwave oven so that food can be heated from above and below

by radiation energy in addition to microwave energy (see Westerberg, Figures 1 and 2 and col. 4, lines 55-65 and Shin, Figure 1 and col. 1, lines 18-61 and col. 3, lines 6-15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Larsen to use lamps as radiant heat sources above and below the food to be heated for more uniform and speedy heating result, in view of the teaching of Westerberg or Shin. In regard to claims 11-14 and 22-24, Westerberg also teaches to independently control each upper and lower heaters depending on the type of food being cooked (see col. 3, line 66 - col. 4, line 10).

3. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larsen et al (US 4,332,992), in view of Westerberg et al (US Re. 36,724) or Shin (US 6,005,235) as applied to claims 1-14 and 17-28 above, and further in view of McKee et al (US 6,060,701) (reference C cited in the previous Office action) or Ishifuro et al (US 4,831,225) (previously cited by the applicants).

Larsen combined with Westerberg or Shin discloses the claimed invention except for the use of a temperature sensor for detecting the oven cavity temperature to control the operation of the oven. McKee shows a combination microwave convection oven with temperature sensing devices 30 and 30' to control the operation of the thermal energy source 25 and the hot air circulating assembly 40 (see Figures 4 and 5, col. 4, line 48 - col. 5, line 59 and col. 11, lines 1-14). Ishifuro also shows that it is well known in the art of microwave convective ovens to use a temperature sensor to sense the oven air temperature to control the operation of the air circulating blower 6 (see Figures 1-3, col. 2, line 42 - col. 4, line 68). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further

modify Larsen to provide a temperature sensing system to monitor the temperature of the cooking cavity to feedback control the operation of the oven components such as, the heater, the microwave source and/or the blower for more precise heating control and better cooking result, in view of the teaching of McKee or Ishifuro.

4. Applicant's arguments filed 1-08-2004 have been fully considered but they are not persuasive. It is clear Larsen shows a combination oven including essentially all the claimed element except that it does not identify the upper heater as a radiant heat source and the use of an additional lower heater. Clearly, any electrical resistance heating elements, including the upper heater 17 of Larsen inherently functions as a radiant source. It also shows the use of a convectional fan 19 for blowing air over the heating element 17 so that Larsen also carries the claimed convection heating. Therefore, the argument "none of Larsen, Westerberg and Shin, alone or in combination, describe or suggest an upper heater module including at least one radiant source and a convection fan positioned to direct air over the radiant source and into the cooking cavity" is not persuasive. It is pointed out that the method of claims 25-28 not only does not include the convectional fan as argued, it does not even require a convention heating mode. Furthermore, the "hindsight" argument is also without merit. It is pointed out that the use of upper and lower electrical heaters in an oven, either a microwave oven or a "convention" range is so common so that food are heated from above or below the food for more even heating and more speedy cooking result, as exemplified by Westerberg or Shin, therefore, to add any well known heating elements in a combination oven such as Larsen, in order to perform an additional heating to achieve expected result would be readily obvious to an ordinary artisan and requires

no “hindsight reconstruction”. In regard to claims 15 and 16, the use of a temperature sensor in an oven to control the operation of the heating elements is also a well known practice in the art of ovens, for example, Larsen teaches the use of temperature control (see col. 4, lines 1-9 and Figure 7) although it does not show the exact location of the sensing element. McKee and Ishifuro are cited to show that it is a basic engineering practice to place the temperature sensing elements in the air flow duct of a conventional oven (combined with microwave heating) in order to accurately detect the air temperature to adjust the convection heating element to precisely control the cooking operation. It would have been obvious to an ordinary artisan to modify Larsen to determine the location of the temperature sensing element in order to better control the conventional heating operation and it certainly requires no “hindsight reconstruction” as argued.

5. **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

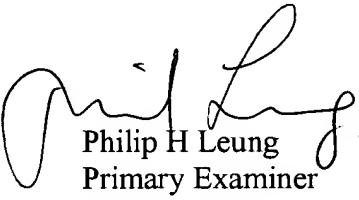
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip H Leung whose telephone number is (703) 308-1710.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg can be reached on (703) 308-2634. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Philip H Leung
Primary Examiner
Art Unit 3742

P.Leung/pl
3-19-2004